Remarks

In the outstanding Official Action, the Examiner:

(1) rejected claim 2 under 35 USC 102(b) as being anticipated by Whitehead '312; and

(2) rejected claims 1 and 3-9 under 35 USC 103(a) as being unpatentable over Whitehead in view of Liu et al.

In response to Item 1 above, Applicant has now amended claim 2 so as to more clearly distinguish the present invention with respect to the prior art of record.

Claim 2 of the present invention comprises a method for tuning an asymmetric Fabry-Perot modulator, the method comprising reflecting laser light between a first reflector and a second reflector in the asymmetric Fabry-Perot modulator, adjusting the first reflector to change the resonating cavity from the given length to another given length so as to produce an optimal wavelength as defined by the properties of elecro-absorption material contained in the modulator, and monitoring the output of the first reflector as the resonating cavity is tuned to the another given length so as to tune the asymmetric Fabry-Perot modulator to the optimal wavelength.

Applicant believes that Whitehead '312 discloses an asymmetric Fabry-Perot modulator having a resonant cavity defined a front reflective surface and a back reflective surface in which

the cavity length is set so as to put the cavity resonance at the optimum wavelength. Applicant further believes that Whitehead '312 discloses a Fabry-Perot modulator cavity length which is set during fabrication, rather than during operation, as there is no structure disclosed for adjusting the reflective surface from a given length to another given length while monitoring the output thereof. Accordingly, Applicant believes that claim 2 is in condition for allowance, and allowance thereof is respectfully requested.

In response to Item 2 above, Applicants have now amended claims 1, 3, 5 and 6 so as to more clearly distinguish the present invention with respect to the prior art of record.

Claim 1 of the present invention comprises an asymmetric Fabry-Perot modulator comprising electro-absorption material disposed between the first reflector and the second reflector, the absorption of the electro-absorption material being varied in response to an external modulating signal, the first reflector being fixedly mounted to a substrate, and the second reflector being movably mounted to the substrate so as to selectively adjust the resonant cavity formed between the first reflector and the second reflector from a given length to another given length by changing the position of the second reflector relative to the first reflector.

Applicant believes that Liu et al. disclose a smetic liquid crystal analog phase monitor having layers of smetic liquid crystal cells which are specifically not aligned perpendicular to the cell walls. Applicant further believes that Liu et al. disclose analog tuning of the refractive index within a Fabry-Perot cavity by changing the refractive index of the liquid crystal. (See column 4, lines 18-48.) Furthermore, Liu et al. states the "filter can be tuned either by changing the cavity length mechanically or by changing the refractive index of the material inside the cavity" (underlining added, see column 1, lines 33-36). Applicant believes that Whitehead '312 and/or Liu et al. do not disclose an asymmetric Fabry-Perot modulator with the absorption of the electro-absorption material being varied in response to an external modulating signal together with the second reflector being movably mounted to the substrate so as to selectively adjust the resonant cavity from a given length to another given length as claimed in claim 1 of the present invention. Accordingly, claim 1 is believed to be in condition for allowance, and allowance thereof is respectfully requested.

Claim 3 of the present invention comprises a method for tuning an asymmetric Fabry-Perot modulator comprising applying an external modulating signal to electro-absorption material disposed between the first reflector and the second reflector,

the absorption of the electro-absorption material being varied in response to the external modulating signal, and adjusting the resonant cavity formed between the first reflector and the second reflector from the given length to another given length.

Applicant believes that Whitehead '312 and/or Liu et al. do not disclose a method for tuning an asymmetric Fabry-Perot modulator comprising applying an external modulating signal to electro-absorption material disposed between the first reflector and the second reflector, and adjusting the resonant cavity from a given length to another given length as claimed in claim 3 of the present invention. Accordingly, claim 3 is believed to be in condition for allowance, and allowance thereof is respectfully requested.

Claims 4 and 5, which depend either directly or ultimately from independent claim 3, are believed to be in condition for allowance at least for the above-identified reasons. Accordingly, allowance of claims 4 and 5 is respectfully requested.

Claim 6 of the present invention comprises a method for tuning a laser comprising electro-absorption material disposed between the first reflector and the second reflector, the absorption of the electro-absorption material being varied in response to an external modulating signal, the second reflector

being movably mounted to the substrate so as to selectively adjust the resonant cavity formed between the first reflector and the second reflector from a given length to another given length by changing the position of the first reflector relative to the second reflector, wherein the magnitude of light output from the first reflector is determined by the reflectivity of the first reflector, the reflectivity of the second reflector, the absorption in the electro-absorption material and the length of the resonant cavity as defined by the another given length of the resonant cavity selectively adjustable between the first reflector and the second reflector, applying the external modulating signal to the electro-absorption material, monitoring the magnitude of light output from the first reflector, and adjusting the resonant cavity from the given length to the another given length based upon the monitored light output so as to tune the asymmetric Fabry-Perot modulator to an optimal wavelength.

Applicant believes that Whitehead '312 and/or Liu et al. do not disclose a method for tuning a laser comprising applying a modulating signal to the absorption material and adjusting the resonant cavity from a given length to another given length as claimed in claim 6 of the present invention. Accordingly, claim

6 is believed to be in condition for allowance, and allowance thereof is respectfully requested.

Claims 7-9, which depend either directly or ultimately from independent claim 6, are believed to be in condition for allowance at least for the above-identified reasons. Accordingly, allowance of claims 7-9 is respectfully requested.

In the event that any additional fees may be required in this matter, please charge the same to Deposit Account No. 16-0221.

Respectfully submitted,

James A. Sheridan 06/11/03

James A. Sheridan
Reg. No. 43,114
Pandiscio & Pandiscio
470 Totten Pond Road
Waltham, MA 02451-1914
Tel. (781) 290-0060

TS/CORE19.AMD